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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/804,740	03/19/2004	Peter Ashwood-Smith	16585ROUS01U	8293
7590 John C. Gorecki, Esq. 165 Harvard St. Newton, MA 02460			EXAMINER BEAMER, TEMICA M	
			ART UNIT 2617	PAPER NUMBER
			MAIL DATE 05/22/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/804,740	Applicant(s) ASHWOOD-SMITH ET AL.	
	Examiner Temica M. Beamer	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,8-12,18 and 21-25 is/are rejected.
- 7) ☒ Claim(s) 3-7,13-17,19,20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 8-10, 12, 18 and 21-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Cain, U.S. Patent Pub. No. 2003/0204623.

Regarding claim 1, Cain discloses a method of routing on a sensor network, the method comprising the steps of receiving by a sensor (destination node) a distance calculation message (i.e., reference information) containing message distance information indicative of a number of hops to a collector node (source node) (abstract, 0012, 0013, 0032), comparing the message distance information with current sensor distance information to obtain a distance result (which reads on determining the node leader and knowing if the cluster association metric is within certain bounds) (0042, 0046, 0047).

Regarding claim 2, Cain discloses the method of claim 1, wherein the distance result indicates that the current sensor distance is farther than the message distance

information. The method further comprising the step of updating the current sensor distance information with the message distance information (0050, 0062).

Regarding claim 8, Cain discloses the method of claim 2, further comprising the steps of creating an updated distance message containing increased message distance information; and broadcasting the updated distance message (i.e., when a node has joined/been added to the cluster) (0058, 0059).

Regarding claim 9, Cain discloses the method of claim 8, further comprising establishing sensor key information (i.e., address information) associated with the sensor and including the sensor key information in the updated distance message (0094).

Regarding claim 10, Cain discloses the method of claim 1, wherein if the distance result indicates that the current sensor distance is the same as the message distance information, the method further comprising the steps of creating an updated distance message containing increased message distance information; and broadcasting the updated distance message (0058, 0059).

Regarding claim 12, Cain discloses The method of claim 1, further comprising the step of periodically increasing the current sensor distance information (which reads on adding more nodes to the cluster) (0058, 0059).

Regarding claim 21, Cain discloses a method of establishing routing information on a sensor network, the method comprising the steps of: generating a distance calculation message containing a distance information parameter indicative of a number of hops to a collector node, the distance information parameter being updateable by

sensors on the sensor network; and broadcasting the distance calculation message to the sensor network (0010-0013, 0016, 0032).

Regarding claim 22, Cain discloses the method of claim 21, further comprising receiving data messages from sensors on the sensor network (0017).

Regarding claim 23, Cain discloses the method of claim 22, wherein the data messages comprise key information (address information) associated with a series of sensors on the network that broadcasted the message to enable the message to propagate from an originating sensor to be received (0014, 0016, 0017).

3. Claims 24 and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Varaiya et al (Varaiya), U.S. Patent Pub. No. 2005/0122231.

Regarding claim 24, Varaiya discloses sensor network, comprising: collector nodes; and sensor nodes; wherein said sensor nodes are configured to use distance information relative to the collector node and key information to selectively transmit data messages on the sensor network (0013, 0015, 0018).

Regarding claim 25, Varaiya discloses the sensor network of claim 24, wherein the sensor nodes are further configured to use traffic condition (idle channel) information to selectively transmit data messages on the sensor network (0017).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2617

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cain in view of well-known prior art.

Regarding claim 11, Cain discloses the method of claim 1 as described above. Cain, however, fails to disclose wherein if the distance result indicates that the current sensor distance is the same as the message distance information, the method further comprising the steps of not rebroadcasting the updated distance message.

The examiner contends, however, that such a feature is well-known in the art and the examiner takes official notice as such.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify Cain with the teachings of well-known prior art, as such a modification would result in saving system resources by reducing the number of messages sent throughout the system.

Allowable Subject Matter

6. Claims 3-7, 13-17, 19 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hamdi et al, U.S. Patent Pub. No. 2004/0203380, discloses a method and wireless terminal for generating and maintaining a relative positioning system.

Kennedy, U.S. Patent Pub. No. 2004/0057409, discloses an intelligent communication node object beacon framework (ICBF) with temporal transition network protocol (TTNP) in a mobile ad hoc network.

Zhao et al, U.S. Patent Pub. No. 2004/0010492, discloses systems and methods for constrained anisotropic diffusion routing within an ad hoc network.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Temica M. Beamer whose telephone number is (571) 272-7797. The examiner can normally be reached on Monday-Thursday (alternate Fridays) 7:30am-4:00pm.

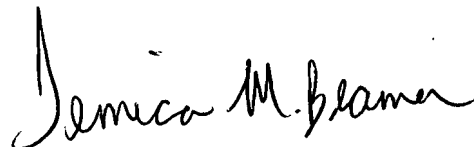
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Appiah can be reached on (571) 272-7904. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2617

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Temica M. Beamer
Primary Examiner
Art Unit 2617

tmb

A handwritten signature in black ink, reading "Temica M. Beamer". The signature is fluid and cursive, with the first name being the most prominent.

TEMICA BEAMER
PRIMARY EXAMINER